

REMARKS

Claims 1-5 and 7-14 are pending in the application. In the Final Office Action of January 12, 2004, the Examiner made the following disposition:

- A.) Rejected claims 1-4 and 7-14 under 35 U.S.C. §103(a) as being unpatentable over *Utagawa et al.* and further in view of *Numazaki et al.*
- B.) Rejected claims 1-5 and 7-14 under 35 U.S.C. §112, first paragraph.
- C.) Rejected claims 1-5 and 7-14 under 35 U.S.C. §112, second paragraph.

Applicant respectfully traverses the rejections and addresses the Examiner's disposition below.

- A.) Rejection of claims 1-4 and 7-14 under 35 U.S.C. §103(a) as being unpatentable over *Utagawa et al.* and further in view of *Numazaki et al.*:

Applicant respectfully disagrees with the rejection.

Claims 1 and 14 have been amended to more clearly claim the subject matter of those claims. Claims 4 and 5 have been amended to correct informalities. Claims 6-9 have been canceled. Claims 10-12 have been amended to depend from claim 1, as claim 7 has been canceled.

Applicant's independent claims 1 and 14, each as amended, each claim producing a signal for driving a display apparatus so that the display apparatus emits a light of divisional light amounts in such a manner as to be distributed within a time corresponding to display of the frame. The light amounts are obtained by dividing light amounts corresponding to bits which compose the digital values corresponding to the pixels of an image.

The display apparatus includes light emission means for emitting light of variable intensity. The light emission means includes at least one light source for emitting the light with variable intensity and a light valve corresponding to each pixel that switches on or off to effect emission of the light from said light source. The light valve is driven by the produced signal.

Both of a first light amount corresponding to a predetermined bit of the bits that compose the digital values and a second light amount corresponding to a bit in a lower order by one bit to the predetermined bit are divided, the first and second light amounts being divided so that a difference between division numbers of the first and second light amounts of adjacent bits whose light amounts are divided is one of 0 and 1, including a case wherein at least one of the division numbers is greater than 2.

Referring to Applicant's Figure 28A as an illustrative example, bits B0-B7 are divided by a division number. As shown, for example, bit B6 is divided 4 times, bit B5 is divided 3 times,

bit B4 is divided 3 times, and bit B3 is divided 2 times. Thus, adjacent bits (*e.g.*, bits B6 and B5) are divided so that a difference between the difference numbers is 0 or 1. In the example, the difference in the number of divisions between adjacent bits B6 (4 divisions) and B5 (3 divisions) is 1. Thus, this is the case even when one of the adjacent bits is divided by more than two divisions.

Accordingly, it is possible to distribute the divisional light amounts obtained by dividing the light amount of a bit plane of a high order (*e.g.*, 4) in positions near divisional light amounts obtained by dividing the light amount of the bit plane of a lower order (*e.g.*, 1). In other words, in the example of Figure 28A, the bits B0-B7 are divided into a maximum of 4 divisions, so that when the divisions are distributed (as shown in Figure 28B), a division of bit (*e.g.*, B7) can be positioned near divisions of other bits (*e.g.*, B6 and B4) instead of having to be positioned next to another division of the same bit (*e.g.*, B7). Thus, if bit B7 was divided 8 times, some of the divisions of bit B7 may need to be positioned next to each other. When the divisions of the same bit are positioned next to each other, that disadvantageously results in moving picture pseudo contours.

Therefore, claims 1 and 14 beneficially avoid moving picture pseudo contours by driving the light valve using the produced signal, which is based on a difference value between adjacent bits to 0 or 1, including for higher order divisions of greater than 2, and by driving the light valve using the produced signal. (See Specification, page 51, line 10 - page 53, line 17).

This is clearly unlike *Utagawa* in view of *Numazaki*., neither of which teaches driving a light valve of a light emission means for emitting light of variable intensity. Unlike Applicant's claims 1 and 14, *Utagawa* fails to disclose or even suggest a light emission means of variable intensity that includes a light valve. Instead, *Utagawa* discloses an processing device that is a camera. The Examiner argues that *Utagawa* col. 9, lines 57-63 and *Utagawa* Figure 26 suggest Applicant's claimed light emission means that emits light of variable intensity and that has a light valve driven by a signal. Applicant respectfully disagrees. Nowhere does that disclosure from *Utagawa* even relate to a light emission means or even a light valve. Instead, that disclosure from *Utagawa* merely describes how an image is received into a camera and processed for use within the camera. In fact, nowhere does *Utagawa* even suggest driving a light valve.

Further, *Numazaki* also fails to disclose or suggest Applicant's claimed signal that drives a light valve of a light emission means for emitting light of variable intensity. Like *Utagawa*, *Numazaki* also fails to even discuss driving a light valve. Instead, *Numazaki* teaches a display device comprising a number of pixels that are driven by transistors, as shown in *Numazaki* Figure

3. Therefore, *Utagawa* in view of *Numazaki* still fails to disclose or suggest Applicant's claims 1 and 14.

Claims 2-5 and 10-13 depend directly or indirectly from claim 1 and are therefore allowable for at least the same reasons that claim 1 is allowable.

Claims 7-9 have been canceled.

Applicant respectfully submits the rejection has been overcome and requests that it be withdrawn.

B.) Rejection of claims 1-5 and 7-14 under 35 U.S.C. §112, first paragraph:

Independent claims 1 and 14 have been amended as per the Examiner's request to overcome the rejection. Applicant respectfully notes that, as described in the specification, the displayed image can be an image of a frame of a plurality of frames of a video. (*See, e.g.,* specification, page 20, lines 1-4).

Claims 2-5 and 10-13 depend directly or indirectly from claim 1 and are therefore allowable for at least the same reasons that claim 1 is allowable.

Claims 7-9 have been canceled.

Applicant respectfully submits the rejection has been overcome and requests that it be withdrawn.

C.) Rejection of claims 1-5 and 7-14 under 35 U.S.C. §112, second paragraph:

Independent claims 1 and 14 have been amended as per the Examiner's request to overcome the rejection.

Claims 2-5 and 10-13 depend directly or indirectly from claim 1 and are therefore allowable for at least the same reasons that claim 1 is allowable.

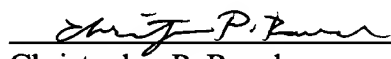
Claims 7-9 have been canceled.

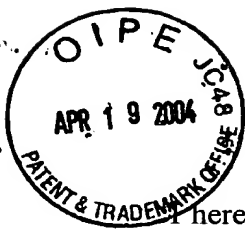
Applicant respectfully submits the rejection has been overcome and requests that it be withdrawn.

CONCLUSION

In view of the foregoing, it is submitted that claims 1-5 and 10-14 are patentable. It is therefore submitted that the application is in condition for allowance. Notice to that effect is respectfully requested.

Respectfully submitted,

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I hereby certify that this correspondence is being deposited as First Class Mail in an envelope addressed to Mail Stop RCE, Commissioner for Patents, PO Box 1450, Alexandria, Virginia 22313-1450 on April 12, 2004.

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